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10/659,129

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David G. Therrien

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EXAMINER

ADAMS, CHARLES D

ART UNIT

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/659,129

Applicant(s)

THERRIEN ET AL.

Examiner

Charles D. Adams

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-17 and 19-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-17, and 19-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. In response to communications filed on 19 July 2007, claims 1 and 3-17 are amended, claims 2 and 18 are cancelled, and claims 19-26 are added per applicant's request. Claims 1, 3-17, and 19-26 are pending in the application.

Claim Objections

2. Claim 10 is objected to because of the following informalities:

Claim 10 reads "creating another version of the file, wherein another version of the file is a version of the file successive to the version of the file". It is unclear whether or not the second recitation of 'another version' is referring to the first recitation of 'another version'.

Claim 10 also reads 'replacing the replicated version of the file in the local repository with a reverse delta compressed version representing a difference between the version file and the another version of the file'. Examiner notes that no recitation of 'version file' appears previously in the claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6, 17, and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whiting et al. (US Patent 5,778,395) in view of Zayas et al. (US Patent 6,560,615).

As to claim 1, Whiting et al. teaches a data protection system, comprising:

A fileserver configured to contain shares of data and to be connected with a repository, wherein the repository is configured to store a replica of a file (see 7:8-19 and 7:59-8:20);

The fileserver includes:

A filter driver operative to intercept input or output activity initiated by client file requests (see 7:8-19 and 7:59-8:20)

Whiting et al. does not teach and further configured to capture a snapshot of a set of the shares of data at a particular point in time and to maintain a list of modified and/or created files since a last snapshot occurred.

Zayas et al. teaches and further configured to capture a snapshot of a set of the shares of data at a particular point in time and to maintain a list of modified and/or created files since a last snapshot occurred (see 5:31-40 and 7:16-46);

Whiting et al. as modified teaches a file system in communication with the filter driver and operative to store client files (see Zayas et al. 7:16-46 and Whiting et al. 7:8-19);

The filter driver is configured to capture the snapshot at a specified time interval based on a backup frequency defined in a protection policy stored in the fileserver (see Whiting et al. 5:2-8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Whiting et al. by the teaching of Zayas et al., since Zayas et al. teaches "insertion and removal of entries in the MFL are performed by the storage system. When the first of a file's data and metadata bits are turned on, the storage system adds the file to the MFL. In this way, a file is added only once to the MFL" (see 7:40-45).

As to claim 6, Whiting et al. as modified teaches: wherein the fileserver, based on the protection policy, is adapted to define repositories used for storage of files (see Whiting et al. 7:59-8:20), frequency of data backup (see Whiting et al. 5:2-8 and 33:49-51), how many replicas are maintained within each repository (see Whiting et al. 8:16-20), and how modifications to share data are maintained (see Whiting et al. 7:59-8:20).

As to claim 17, Whiting et al. teaches a data protection system comprising:

A fileserver configured to contain shares of data and to be connected with a repository, wherein the repository is configured to store a replica of a file (see 7:8-19 and 7:59-8:20);

Said fileserver includes:

Filter driver means for intercepting input or output activity initiated by client file requests (see 7:8-19 and 7:59-8:20)

Whiting et al. does not teach and for capturing a snapshot of a set of the shares of data at a particular point in time and for maintaining a list of modified and/or created files since a last snapshot occurred

Zayas et al. teaches and for capturing a snapshot of a set of the shares of data at a particular point in time and for maintaining a list of modified and/or created files since a last snapshot occurred (see 5:31-40 and 7:16-46)

Whiting et al. as modified teaches:

File system means in communication with the filter driver, the file system means for storing client files (see Zayas et al. 7:16-46 and Whiting et al. 7:8-19);

Wherein said filter driver means is configured to capture the snapshot at a specified time interval based on a backup frequency defined in a protection policy stored in the file server (see Whiting et al. 5:2-8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Whiting et al. by the teaching of Zayas et al., since Zayas et al. teaches "insertion and removal of entries in the MFL are performed by the storage system. When the first of a file's data and metadata bits are turned on, the storage system adds the file to the MFL. In this way, a file is added only once to the MFL" (see 7:40-45).

As to claim 21, Whiting et al. as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine whether to purge a file from a repository after the file has been deleted from a set of files (see Zayas et al. 7:11-15 and 8:5-14).

As to claim 22, Whiting et al. as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine whether to keep a version history of a file in the set of files (see Whiting et al. 7:59-8:20 and 34:24-36).

As to claim 23, Whiting et al. as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine a specified backup frequency for a repository (see Whiting et al. 5:2-8 and 33:49-51).

As to claim 24, Whiting et al. as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine a specified type of compression for a file in the set of files (see Whiting et al. 8:21-40).

As to claim 25, Whiting et al. as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine a specified caching level of a repository (see Whiting et al. 6:52-7:2).

5. Claims 3-5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whiting et al. (US Patent 5,778,395) in view of Zayas et al. (US Patent 6,560,615), and further in view of Belknap et al. (US Pre-Grant Publication 2003/0070001).

As to claim 3, Whiting et al. as modified teaches the system of claim 1.

Whiting et al. as modified does not teach a location cache configured to determine based on the protection policy which repository will be used to protect each share of data;

Belknap et al. teaches a location cache configured to determine based on the protection policy which repository will be used to protect each share of data (see paragraphs [0063]-[0064]).

Whiting et al. as modified teaches a location manager coupled to the location cache and operative to update the location cache when the fileserver protects a new share of data in a specific repository node (see Belknap et al. paragraph [0069]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified Whiting et al. by the teaching of Belknap et al., since Belknap et al. teaches "to provide a common interface to media servers which conceals the media server specific device commands from applications which interact with the media servers included within the system" (see paragraph [0006]).

As to claim 4, Whiting et al. as modified teaches:

A local repository in communication with the fileserver and adapted for receiving files from the fileserver (see Whiting et al. 7:59-8:20. Whiting et al. transfers items from a local database to a remote one):

A local repository node API adapted for communicating with the fileserver API (see Whiting et al. 7:59-8:20);

The local repository is further adapted to receive replicated files from the fileserver (see Whiting et al. 7:59-8:20); and

The local repository includes a protection policy component operative to determine whether new versions of existing files should be compressed and whether older versions of exiting files should be maintained (see Whiting et al. 7:59-8:20 and 34:24-36).

As to claim 5, Whiting et al. as modified teaches:

A remote repository in communication with the local repository and adapted for receiving files from the local repository (see Belknap et al. paragraph [0066] and Whiting et al. 6:52-7:2):

The remote repository is further adapted to receive replicated files from the local repository (see Belknap et al. paragraph [0066] and Whiting et al. 6:52-7:2);

The remote repository includes a protection policy component operative to determine whether new versions of existing files should be compressed and whether older versions of existing files should be maintained (see Whiting et al. 7:59-8:20 and 34:24-36).

As to claim 20, Whiting et al. teaches the system of claim 1.

Whiting et al. does not teach wherein, based in the protection policy, the fileserver is configured to determine the location of repositories

Belknap et al. teaches wherein, based in the protection policy, the fileserver is configured to determine the location of repositories (see paragraphs [0063]-[0064])

Whiting et al. as modified teaches and a number of replicas of the files to be stored in each repository (see Whiting et al. 8:16-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified Whiting et al. by the teaching of Belknap et al., since Belknap et al. teaches "to provide a common interface to media servers which conceals the media server specific device commands from applications which interact with the media servers included within the system" (see paragraph [0006]).

6. Claims 7-10, 13-16, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker et al. (US Patent 6,847,982) in view of Zayas et al. (US Patent 6,560,615).

As to claim 7, Parker et al. teaches a method for protecting data comprising:

Storing a version of a file within a set of files on a primary disk storage system (see 7:24-35);

Parker et al. does not teach capturing a snapshot of the set of files at a particular point in time

Zayas et al. teaches capturing a snapshot of the set of files at a particular point in time (see 7:16-46);

Parker et al. as modified teaches based on a backup frequency defined in a protection policy (see Parker et al. 7:32-34 and 9:6-11);

Maintaining a list of modified and/or created files since last captured snapshot (see Zayas et al. 5:31-40 and 7:16-46);

Examining the protection policy associated with the set of files to determine where and how to protect files associated with the set of files (see Parker et al. 7:34-35 and 9:23); and

Replicating the version of the file to a repository specified by the protection policy, wherein the repository includes at least one of a local repository and a remote repository (see Parker et al. 7:44-59 and 9:23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Parker et al. by the teaching of Zayas et al., since Zayas et al. teaches "insertion and removal of entries in the MFL are performed by the storage system. When the first of a file's data and metadata bits are turned on, the storage system adds the file to the MFL. In this way, a file is added only once to the MFL" (see 7:40-45).

As to claim 8, Parker et al. teaches wherein the file is configured to have at least one version (see Parker et al. 8:17-25 and Zayas et al. 6:65-7:15).

As to claim 9, Parker et al. teaches applying reverse delta compression to the versions of the file when a successive version of the file is stored in the repository (see Parker et al. 9:54-10:4).

As to claim 10, Parker et al. teaches wherein the step of applying reverse delta compression comprises:

Creating another version of the file, wherein another version of the file is in a version of the file successive to the version of the file (see Parker et al. 9:54-10:4);

Replicating the another version of the file into the local repository and the remote repository (see Parker et al. 6:42-59 and 9:54-10:4);

Replacing the replicated version of the file in the local repository with a reverse delta compressed version representing a difference between the version file and the another version of the file and replicating; (see Parker et al. 9:54-10:4)

Transmitting the reverse delta compressed version to the remote repository (see Parker et al. 6:42-59. A reverse delta can be sent with the data with the shipping container as well as a forward delta); and

In the remote repository, replacing the version of the file with the reverse delta compressed version to store the another version and the reverse delta compressed

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version (see Parker et al. 6:42-59 and Zayas et al. 7:25-32. A reverse delta can be sent with the data with the shipping container as well as a forward delta).

As to claim 13, Parker et al. teaches wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining whether to keep a version history of a file in the set of files (see Zayas et al. 7:25-40 and Parker et al. 9:54-10:4).

As to claim 14, Parker et al. teaches wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining a specified backup frequency for a repository (see Parker et al. 8:17-25 and 9:6-11).

As to claim 15, Parker et al. teaches wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining a specified type of compression for a file in the set of files (see Parker et al. 6:42-59. A reverse delta can be chosen along with a forward delta to send to the library).

As to claim 16, Parker et al. teaches wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining a specified caching level of a repository (see Parker et al. 9:12-14. A storing (caching) frequency level is determined and chosen).

As to claim 26, Parker et al. as modified teaches wherein the fileserver further includes:

backup means for backing up the modified files into repositories identified in the protection policy based on the backup frequency (see Parker et al. 9:6-11);

Storage means for storing a latest version of a file in a repository where a prior version of the file is stored (see Parker et al. 9:54-10:4);

Means for determining a difference between the latest version of the file and the prior version of the file (see Parker et al. 9:54-10:4);

Means for applying reverse delta compression of the difference (see Parker et al. 9:54-10:4); and

Means for replacing the prior version of the file with the reverse delta compressed difference between the latest version and the prior version of the file (see Parker et al. 9:54-10:4).

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7. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker et al. (US Patent 6,847,982) in view of Zayas et al. (US Patent 6,560,615), and further in view of Santry et al. ("Deciding when to forget in the Elephant file system").

As to claim 11, Parker et al. teaches wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining the location of repositories (see Parker et al. 10:36-55)

Parker et al. does not teach and a number of replicas of the files to be stored in each repository.

Santry et al. teaches a number of replicas of the files to be stored in each repository (see page 113, section 3.3. Only one version is kept).

Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to have modified Parker et al. by the teaching of Santry et al., since Santry et al. teaches that "old versions of files are automatically retained and storage is managed by the file system. Users specify retention policies for individual files, groups of files, or directories. The goal of Elephant is to allow users to retain important old versions of all of their files. User actions such as delete and file write are thus easily revocable by rolling back a file system, a directory, or an individual file to an earlier point in time" (see page 111, last paragraph of section 1).

As to claim 12, Parker et al. teaches the method of claim 7.

Parker et al. does not teach wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining whether to purge a file from a repository after the file has been deleted from a set of files.

Santry et al. teaches wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining whether to purge a file from a repository after the file has been deleted from a set of files (see page 113, section 3.5 and 115, section 4.2.3 (it is determined whether a file should be deleted)).

Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to have modified Parker et al. by the teaching of Santry et al., since Santry et al. teaches that "old versions of files are automatically retained and storage is managed by the file system. Users specify retention policies for individual files, groups of files, or directories. The goal of Elephant is to allow users to retain important old versions of all of their files. User actions such as delete and file write are thus easily revocable by rolling back a file system, a directory, or an individual file to an earlier point in time" (see page 111, last paragraph of section 1).

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Whiting et al. (US Patent 5,778,395) in view of Zayas et al. (US Patent 6,560,615), and further in view of Burns et al. ("Efficient Distributed Backup with Delta Compression").

As to claim 19, Whiting et al. teaches:

Backup said modified files into repositories identified in said protection policy based on said backup frequency (see Whiting et al. 5:2-8 and 33:49-51);

Store a latest version of a file in a repository where a prior version of said file is stored (see Whiting et al. 8:21-31);

Determine a difference between said latest version of said file and said prior version of said file (see Whiting et al. 8:21-31);

Whiting et al. does not teach to apply reverse delta compression to said difference;

Burns et al. teaches to apply reverse delta compression to said difference (see Burns et al. section 4.2);

Whiting et al. as modified teaches replace said prior version of said file with said reverse delta compressed difference between said latest version and said prior version of said file (see Burns et al. section 4.2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified Whiting et al. by the teaching of Burns et al., since Burns et al. teaches that "by using delta compression algorithms,

which minimally encode a version of a file using only the bytes that have changed, a backup system can compress the data sent to a server” (see Abstract).

Response to Arguments

9. Applicant's arguments filed 19 July 2007 have been fully considered but they are not persuasive.

Applicant argues that Parker et al. does not “examine a protection policy and determine where and how to protect files”. Examiner notes that the protection policy found in Parker et al. 7:24-35 states that “inventories are then run at schedule intervals to identify and capture new and previously captured files that have change. All captured files are forwarded to the Akahsic Vault for storage and processing”.

Applicant argues that the method disclosed in Parker et al. “is different than replicating the version of the file to a repository specified by the protection policy, wherein the repository includes at least one of a local repository and a remote repository”. Examiner notes that Parker et al. discloses in 7:24-35 that the “new and previously captured files are forwarded to the Akashic Vault for storage and processing”. The Akashic Vault is a local repository.

Applicant's arguments with regard to Whiting et al. are moot in view of the new grounds of rejection of the combination of Whiting et al. in view of Zayas et al.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Adams whose telephone number is (571) 272-3938. The examiner can normally be reached on 8:30 AM - 5:00 PM, M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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